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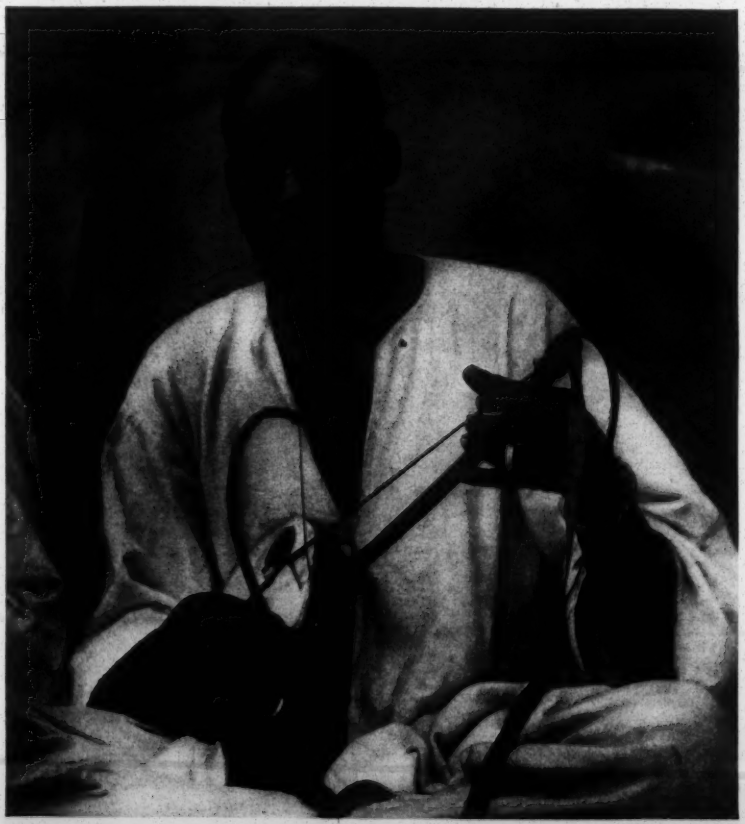

ARTHUR S. ALBERTS

THIS WEST AFRICAN MUSICIAN LIVES IN THE UPPER REACHES OF THE VOLTA RIVER WHICH, FARTHER DOWNSTREAM, WILL BE DAMMED TO PROVIDE POWER FOR THE GOLD COAST (Bulletin No. 2)

Bulletin No. 1, February 9, 1953

Guatemala Plans Trade Increase in Hardwoods

GUATEMALA, northernmost nation in the Central American chain, is planning to make greater use of its extensive forests to increase trade with the United States and the rest of the world.

These hardwood forests, mostly of mahogany, are located in the Petén district. They surround one of the country's largest lakes, and stretch as far as the Mexican border. The program for exploiting them includes new railways and a new port where the Sarstoon River enters the Gulf of Honduras.

Most Business Done with Uncle Sam

By far the best customer for Guatemala's goods is the United States which buys the bulk of the four leading exports—coffee, bananas, chicle, and abacá. Chicle is the main ingredient for chewing gum. Abacá is a hemp fiber. The United States, in turn, supplies most of the goods Guatemala purchases outside its borders.

As exports indicate, agriculture is the chief source of Guatemala's welfare. Tropical lowlands along the east and west sides of the country are blessed with very rich soil. This makes up for the fact that much of the interior is mountainous and dotted with active volcanoes.

In size, an area of 42,042 square miles makes Guatemala comparable to Tennessee. The 1950 census reported a population of 2,787,030, about equal to that of Florida. More than half the people are Indians, descendants of the ancient Maya-Quiché tribes. Among the remainder, those of mixed Indian and Spanish stock are the most numerous.

For their national emblem, Guatemalans have chosen the *quetzal* (pronounced: ket-zal'), one of the most beautiful birds to be found in the mountains of Central America. So brilliant is its plumage that the gold-green tail feathers were reserved for chiefs to wear in the heyday of Mayan civilization before the Spaniards came. The bird's name is from the Aztec tongue.

Customs of the Past Survive

The people are reminded in another way of this Mayan heritage because the standard coin is called the quetzal and bears the bird's image. It has the same value as the United States dollar.

Customs and ritual dances of the misty past survive, especially in rural areas. People from different villages dress differently; their clothing is the equivalent of an address placard in identifying what place they call home. Native garb—some of it following designs predating America's discovery—is cheerful and bright.

Pedro de Alvarado, a lieutenant of Cortés, conquered what is now Guatemala in 1524. It remained a colony of Spain until 1821 when it broke away in a bloodless revolution. For a time it joined the newly formed Mexican Empire, then separated to become part of a Central American confederation, and finally emerged independent in 1839.

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UMI

E. JOHN LONG

LAKE ATITLÁN'S GLASSY WATERS MIRROR THE CLOUD-VEILED CONE OF SAN PEDRO VOLCANO AND THE CREW OF A NATIVE LAKE CRAFT

Sombreros shielding their heads from the glaring sun, Indians of a mountain village of Guatemala (Bulletin No. 1) propel their heavy *cayuco* across the placid surface of Atitlán with cumbersome wooden paddles. Ancestors of these native Guatemalans were navigating such craft when the conquistadores invaded their land four centuries ago.

Bulletin No. 2, February 9, 1953

Gold Coast Water Power to Process Aluminum

"JUJU" is an ancient word for sorcery among Ashanti tribesmen of the Gold Coast, Britain's Colony on the south of Africa's western bulge. But when a 2,000-square-mile lake begins to appear in Ashanti country a few years from now, the tallest tales of juju will be topped.

The colony plans to dam the muddy, meandering Volta River. This will submerge one-fiftieth of the entire country but, in return, will provide enough hydroelectric power to put the Gold Coast high among the world's aluminum producers.

Includes Inland as Well as Coastal Territory

The British government has approved the project. It will require 20 years to complete. Roaring mills, new railroads, and a new port at Tema on the Gulf of Guinea will result. The project will provide inland-water transportation across one of the largest man-made lakes in the world, and irrigate thousands of square miles of semiarid land.

The Gold Coast stretches for 334 miles along the Gulf of Guinea and also extends 440 miles inland. It includes the original colony along the shore, and also the back-country Ashanti province, the grassy Northern Territories, and a part of Togoland administered by the British under United Nations trusteeship. Its population is estimated at 4,400,000, all but 7,000 of whom are Africans (illustration, cover).

African ministers and an African legislature today practically rule the colony. A new nation is slowly being built there, aimed at becoming the first Negro dominion in the British Commonwealth. In 1951, the world watched with interest the first country-wide popular election.

When the day of independence arrives, the new state probably will be named Ghana, for the ancient kingdom of the Ashanti.

Bauxite Deposits Almost Untouched

Gold gave the tropical territory its present name, but gold was long ago surpassed as the principal source of wealth from the colony's rich earth. Today, while the Gold Coast stands sixth in world gold production, it ranks first among sources of the cacao bean from which cocoa and chocolate are made. In diamond output it stands third.

Mahogany, palm oil, kola nuts, and manganese, vital in the age of metallurgy, all add to its wealth. Entire hilltops of rich bauxite are almost untapped. This ore, from which aluminum is extracted, will be smelted by electricity taken from the Volta River. Enough ore has already been proved —225,000,000 tons—to feed the proposed smelters for two centuries, and produce 120,000 long tons of aluminum a year.

Portuguese explorors rounding Africa's western hump in 1471 were the first Europeans to land on the Gold Coast, although there is evidence that Phoenicians may have preceded them. So plentiful was gold that the landing place was named Elmina—The Mine. To protect their foothold, the Portuguese 11 years later built the fortress of St. George there. Christopher Columbus and Bartholomeu Diaz accompanied the fort-building party.

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Chief city and capital of the republic is Guatemala, which has a population of almost 300,000. A violent earthquake virtually destroyed the city in 1917 and modern ideas influenced its rebuilding. Some 75 miles inland from the Pacific, the capital stands on a pleasant plateau about a mile above sea level. Thanks to the site, it enjoys a comfortable climate throughout the year.

A majority of the people live in the southern third of the country where the capital is located. This region is not without its share of the fine scenery in which the country abounds. Beautiful lakes and neighboring volcanoes mark the landscape. Atitlán (illustration, inside cover) and Amatitlán are two lakes that have long attracted tourists.

NOTE: Guatemala appears on the National Geographic Society's map of Countries of the Caribbean. Write the Society's headquarters, Washington 6, D. C., for map list.

See also, "Guatemala Revisited," in *The National Geographic Magazine* for October, 1947; "To Market in Guatemala," July, 1945; "Guatemala Interlude," October, 1936; and "Guatemala: Land of Volcanoes and Progress," November, 1926 (out of print; refer to your library); and "Guatemala Is Populous Central American Land," in the GEOGRAPHIC SCHOOL BULLETINS, December 4, 1950. *(Back issues of the Magazine may be obtained by schools and libraries from the the Society's headquarters at a special discounted price of 50¢ a copy, 1946–to date; 90¢, 1930–1945; $1.90, 1913–1929. Earlier issues at varied prices.)*

LUIS MARDEN

LA MERCED, ONE OF 50 BEAUTIFUL CHURCHES OF ANTIGUA, EARLY CAPITAL OF GUATEMALA, HAS SURVIVED FOUR CENTURIES OF WEAR AND TEAR, INCLUDING SEVERAL DISASTROUS EARTHQUAKES

Bulletin No. 3, February 9, 1953

President was Born in Texas Cross Timbers

GEOGRAPHICALLY speaking, the new President of the United States is a Cross Timbers man. Dwight D. Eisenhower was born on October 14, 1890, at Denison, Texas.

The town had 11,000 inhabitants at the time of the birth of the future president. South across the Red River from what was then the Indian Territory and is now the State of Oklahoma, Denison stood midway along a strange strip of tangled oak forests which ran north and south and was known as the Cross Timbers.

Extends Hundreds of Miles

This long natural hedge between the settled regions of the United States and the vast ocean of prairie to the west formed one of the best-known landmarks of the southwest. For 60 years the Cross Timbers had been the dividing line between the lands of the white man and those of the Plains Indian.

The Cross Timbers stretched for hundreds of miles, from below the Brazos River in Texas north across the Red River to the Cimarron and Arkansas rivers of Oklahoma.

Ranging from five to fifty miles in width, the belt of scrub post oak and blackjack oak grew on dry uplands where sandstone and pebble deposits outcropped on the prairie.

The earliest Spanish explorers traveling across the region encountered this forested barrier on journeys east and west. It is possible that the name "Cross Timbers" can be traced back to them. Or it may have originated with the early cattlemen and trail drivers (illustration, next page) who had to make their way through the dense dwarf forests on their journeys.

Gradually the name became a means for giving directions. The first trading posts and army forts built on the east-west-flowing rivers and streams of northern Texas and the Indian Territory were often described as being so many miles "above" or "below" the Cross Timbers.

Trappers and traders arranging meetings on one of the rivers merely agreed on how many miles from the Cross Timbers.

Tree Limbs a Hazard to Human Limbs

Travel in pioneer times and in that frontier country was a matter requiring endurance and a good sense of direction. There were no roads in the area. In an almost trackless wilderness, the Cross Timbers stood out as a most conspicuous landmark.

It was a very handy signpost, but when the traveler got into it, it became a definite hindrance rather than a help. Dead limbs of the blackjack oak—downward-slanting, hard, and lancelike—formed a thick maze which could tear human hide and wreck clothing.

Washington Irving described the Cross Timbers with feeling in his book *A Tour On the Prairies*. The blackjack branches, which he called "the cast iron stuff," had torn off half his frock coat. This catastrophe so colored

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French, English, Dutch, Swedes, Danes, and Germans followed the Portuguese. They built forts at frequent intervals along the Guinea coast, and fought the natives and each other.

By the 17th century gold had been exceeded by another source of profit. Thousands of slaves were shipped each year from the Gold Coast to New World colonies, until British naval guns backed up England's abolition of the slave trade in 1807.

Britain gradually gained control on the Gold Coast, although seven Ashanti wars, the last in 1900, retarded the colony's progress. In this century, however, the natural wealth of the Gold Coast, particularly in cacao farming begun 70 years ago, has made great strides. Aluminum unlocked by the Volta promises an even more shining future.

NOTE: The Gold Coast may be located on the Society's map of Africa.

For further information, see "Hunting Musical Game in West Africa," in *The National Geographic Magazine* for August, 1951; and, in the GEOGRAPHIC SCHOOL BULLETINS, April 17, 1950, "Africa's Gold Coast Exports More than Gold."

ARTHUR S. ALBERTS

SHOPPERS JAM THE STREETS OF KUMASI UPON HEARING OF A TRADING-COMPANY SALE

Eagerly sought by the Ashanti tribespeople are bright prints from Europe's mills. Those who cannot afford the imported materials get along with homespun blue-and-white cotton. Kumasi is the capital of Ashanti, one of the four divisions that make up Britain's Gold Coast holdings. Nearly 80,000 persons live in the inland city.

Bulletin No. 4, February 9, 1953

Cobalt "Bomb" Joins War on Disease

MEDICAL use of a radioactive "bomb" at the Victoria Hospital in London, Ontario, draws attention to cobalt, a highly strategic and relatively rare metal.

The bomb being used by the Ontario hospital has a heart of cobalt which has been made radioactive in the nuclear reactor at Canada's Chalk River plant. Similar small slugs of cobalt and tubes and wires of the scarce metal have been produced at Oak Ridge, Tennessee.

Cobalt Is More Plentiful than Radium

The treated cobalt is sometimes substituted for radium in medical treatment as the latter element is much more expensive. The Canadian equipment, for instance, was installed at a cost of $50,000, and is roughly the equivalent of $50,000,000 worth of radium—more than chemists have thus far isolated in the entire world.

Although cobalt is much more plentiful than radium, there isn't enough of it. It is high on the list of strategic metals and is in great demand. In the United States, cobalt is strictly allocated. This country must import most of its supply at present.

In 1951 the United States imported ores, alloys, pure metal, and other source material with a cobalt content of more than 11,000,000 pounds, topping the previous record of 9,095,000 pounds brought in in 1950.

More than half of this quantity came from the Belgian Congo (6,834,000 pounds). Nearly 4,000,000 pounds came from Belgium, and smaller quantities were obtained from several other countries, including Canada, Mexico, France, and the United Kingdom.

In an effort to avoid too much dependence on imported cobalt, the United States government is cooperating with private industry to increase domestic production of the metal.

The most ambitious project is a refinery recently completed at Garfield, Utah. It went into production in December, 1952, and is now engaged in refining ores mined and processed at the Forney workings. These are 30 miles southwest of Salmon, Idaho. On July 1, 1951, Forney, Idaho, officially changed its name to Cobalt.

Has Many Different Uses

Cobalt is seldom found in its natural state. It nearly always occurs with iron, nickel, and other metals. The Idaho mines produce gold, copper, and cobalt.

Cobalt is an exceedingly versatile metal. New uses for it are developing constantly.

In addition to its use in the treatment of disease, cobalt is essential for permanent magnets in radios, radar installations, and television sets; for high-speed cutting tools; as a pigment, dryer, and bond for paint and enamel; and in the turbine blades and nozzles of the engines of jet aircraft.

It is this last use which has created the present extremely heavy demand for cobalt. Although other metals have been tried for turbine

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his impression of the place that the famous easterner wrote ". . . a cheerless prospect, hill upon hill, forest upon forest, all of one sad russet hue."

The Butterfield stage, longest stage route in the world, ran through the Cross Timbers very near Denison as early as 1858. But until the end of the 1870's, the Cross Timbers was the edge of settlement.

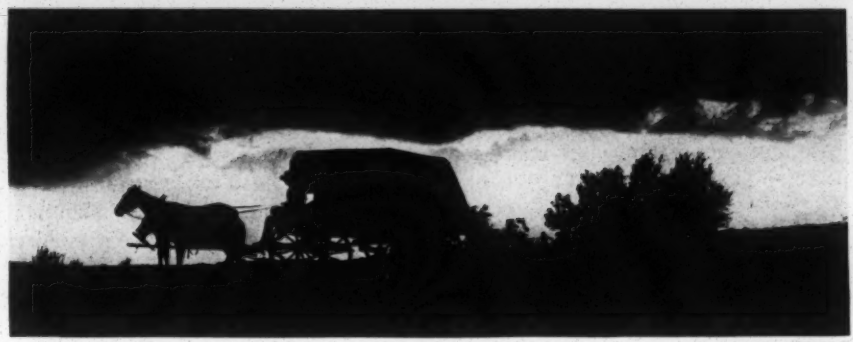
To the west the Comanches, the Apaches, and the Kiowas roamed their ancestral lands, to which Uncle Sam had brought, also, from southeastern states, the "Five Civilized Tribes"—Creeks, Cherokees, Chickasaws, Choctaws, and the Florida Seminoles.

Much of the Cross Timbers has disappeared, cut down for highways, farms, and villages. The Soil Conservation Service of the U. S. Department of Agriculture has supervised reclamation of the land for agriculture. At various times the State of Oklahoma has been urged to sponsor a Cross Timbers National Park, but nothing has come of the idea so far.

The railroad, the automobile, and the airplane have taken the Cross Timbers off the travel map. Yet only ten years before Dwight Eisenhower was born, the name meant the oak fence on the nation's southwest frontier.

NOTE: Denison is shown on the Society's map of the South Central United States.

For additional information, see "Yield of Texas," in *The National Geographic Magazine* for February, 1945; "Down the Rio Grande," October, 1939; "Texas Delta of an American Nile," January, 1939; and "So Big Texas," June, 1928.



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EARLY TRAIL DRIVERS MET AND SURMOUNTED MANY OBSTACLES ON THE WAY WEST

Rivers, deserts, and mountains are recalled as the most gruelling handicaps in America's race toward the Pacific Ocean in the 19th century. However, in the vicinity of President Eisenhower's birthplace at Denison, Texas, a unique obstruction was encountered—timber. The Cross Timbers region formed a north-south belt of tangled oak which was hard to penetrate. When Dwight D. Eisenhower was born in 1890, the area across the near-by Red River was still Indian Territory.

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Bulletin No. 5, February 9, 1953

Greece's Delphic Oracle Always "Knew Best"

THE world has seen thousands of soothsayers, fortunetellers, prophets, and prognosticators, but few can equal the 100-per-cent success of the ancient Oracle of Delphi in Greece. The prophecies given out by that seer set a pattern for prediction that is still followed.

The Delphic Oracle in its palmiest days was housed in a magnificent temple. This edifice was elaborately adorned with expensive gifts from visitors seeking a knowledge of the future.

Oracle Was Too Vague for Croesus

The chief secret of this Oracle's success was the vagueness of its predictions. Like the solemn declarations of some present-day politician or compiler of polls, these could be taken in different ways according to the hope of the suppliant. And no matter what happened, the Oracle could always say "I told you so," and no one could prove it had not!

For instance, Croesus, King of Lydia, whose wealth, according to legend, was so great that his name became a synonym for vast riches, interpreted the Oracle's "doubletalk" to mean that he would be successful in a war with Cyrus, King of Persia. According to one legend, Cyrus defeated him and Croesus was saved by Apollo—god of the Oracle—from being burned. Apollo sent a providential rain just in time.

Somewhat annoyed by his warm experience, Croesus asked the Oracle just how it could have been so wrong. He was told that the prediction was entirely correct. Croesus had simply interpreted it the wrong way.

The temple of Apollo at Delphi, home of the Oracle, was set in a valley on the southern slope of Parnassus. This famous mountain rises 8,064 feet above the sea in south-central Greece, about 70 miles northwest of Athens. To the west of Parnassus, beyond the temple village of Delphi, rises an even higher peak, Mt. Giona (8,242 feet).

Olive groves pattern the land ascending northward from the Gulf of Corinth. Wooded ravines and rocky gorges slash the slopes of the mountains, which are a continuation of the Pindus Range extending northwestward into Albania.

Source of Fumes a Mystery

The Oracle was installed in a small stone chamber of the temple. There stood a tripod, or three-legged stool, of bronze, before the *omphalos*, a stone which, according to Greek mythology, represented the center of the world. The priestess, or Pythia, sat on the tripod and inhaled fumes issuing from a hole in the omphalos. This clever device gave forth smoke at appropriate times.

It is not definitely known whether these fumes came from narcotics burned in a chamber below or whether they were natural sulphurous vapors issuing from the earth.

After she had inhaled the fumes, the Pythia would go into a frenzy and pour forth her prophecy in incoherent ravings. Her words would be taken down and translated into predictions by the attendant priests.

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blades, cobalt alloy withstands the extreme temperatures of jet engines without losing strength far better than any other known material.

Cobalt as a metal was first prepared by George Brandt in Sweden in 1733, although it is known that the ancient Egyptians colored glass with material containing cobalt.

The name is derived from the Saxon German word *kobold*, meaning goblin, because Saxon miners who attempted to smelt it were poisoned by arsenical fumes given off by heated cobalt-bearing ores.

NOTE: For further information about mines and minerals, see "White Magic in the Belgian Congo," in *The National Geographic Magazine* for March, 1952; "'Rockhounds' Uncover Earth's Mineral Beauty," November, 1951; "Exploring the World of Gems," December, 1950; "Montana, Shining Mountain Treasureland," June, 1950; "Newfoundland, Canada's New Province," June, 1949; "Brazil's Land of Minerals," October, 1948; and "In Manchuria Now," March, 1947.

TRUCK LOADS OF METAL BARS AWAIT SHIPMENT AT COBALT'S RAILROAD STATION

Cobalt, Ontario, which produces the silver-white metal for which it was named, lies in the midst of a rich silver-mining district 330 miles north of Toronto. Canada also produces cobalt as a by-product of copper and nickel smelting. The Canadian town acquired a namesake in the United States when the Forney workings near Salmon, Idaho, adopted the name Cobalt to emphasize its growing importance as a source of this strategic mineral.

"Everyday Life in Ancient Times"

A new book compiled by the National Geographic Society brings to life the peoples of the ancient lands where Western civilization originated—Mesopotamia, Egypt, Greece, and Rome. Illustrated with 120 full-color paintings by H. M. Herget and written by four noted authorities, the 356-page volume is available to schools at $5.00 a copy postpaid in the United States and its possessions, and $5.25 abroad.

The predictions always fitted the occasion. Their moral tone was beyond criticism, and prophecies on religious subjects mixed proper piety with recommendations that the gods be duly honored by prayers and donations.

The Oracle was a bit less positive on political matters. It took pains to be so vague that the questioner could easily believe what he wanted to think was true.

Conquerors such as Cyrus of Persia and Philip of Macedon were treated with great caution. Predictions that did not please them could always be reconsidered and a more desirable one returned.

NOTE: Delphi may be located on the Society's map of Europe and the Near East.

For additional information, see "War-torn Greece Looks Ahead," in *The National Geographic Magazine* for December, 1949; "Erosion, Trojan Horse of Greece," December, 1947; "The Greek Way," March, 1944; "Classic Greece Merges Into 1941 News," January, 1941; and "Modern Odyssey in Classic Lands," March, 1940.

See also, in the GEOGRAPHIC SCHOOL BULLETINS, April 21, 1952, "Greece Gives NATO a Balkan Bastion."

MAYNARD OWEN WILLIAMS

ON THE SLOPES OF PARNASSUS, MODERN GREEKS PRESENT A REVIVAL OF AN ANCIENT PLAY

The Delphic Festival held on Mt. Parnassus in 1930 marked the centenary of the Greek War of Independence (1821-1830). For two weeks the storied mountain was the backdrop for a revival of ancient dramas, dances, games, and athletic contests. The renovated stadium blazed with the vivid hues of costumes from all parts of the country. Everyone who owned a costume handed down in the family wore it proudly. Many who did not made replicas of these prized heirlooms.